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10/694,765	10/29/2003	Francois Paul	4590-227	5287

7590 02/21/2008  
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EXAMINER
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CHEEMA, UMAR

ART UNIT	PAPER NUMBER
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2144

MAIL DATE	DELIVERY MODE
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02/21/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/694,765

Applicant(s)

PAUL, FRANCOIS

Examiner

UMAR CHEEMA

Art Unit

2144

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

This action is response to the Amendment filed on 27 November 2007. Claims 1-18 are pending with claims 1 and 9 being the independent claims. Claims 1 and 9 have been amended.

Applicant's arguments, see remarks, field 11/27/2007, with respect to the Drawing and Specification have been fully considered and are persuasive. The objections to the Drawing and Specification have been withdrawn.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Punkaj et al (Punkaj) (US Patent# 6,229,795) in view of Schaeffer et al (Schaeffer) (US Patent # 5,455,821) and further in view of Yamashita (US Patent # 6,256,500).

**Regarding claim 1**, Pankaj substantially discloses the invention as claimed a method for the allocation of resources in a radio communications system in a state of broadcasting, comprising several stations, at least two of which are not within range of visibility, the method comprising the following steps: defining a graph of competition between the different stations;

assigning time intervals to each station in making successive passages on all the stations and carrying out the following steps at each passage and for each station (see col. 1, lines 34-49):

E is an interval of given time interval numbers (see col. 12, lines 55-57); n is the smallest natural integer that does not belong to the interval E (see col. 12, lines 58-59);

(A.1) if it is not the first passage AND if  $n > N_{max}$ , then no time interval whatsoever is added to the station  $S_i$  (see fig. 5, col. 8, lines 5-20, col. 9, lines 27-42);

(A.2) if it is the first passage OR if  $n \leq N_{\max}$ , then  $n$  is added to the time intervals assigned to  $S_i$  (see fig. 7 (a-b), col. 11, lines 55-67, col. 12, lines 3-34);

(B) the loop of the passages is continued on all the stations:

(B.1) if, during a passage, no time interval has been added to any station, then no other passage is made; (B.2) if, during a passage, at least one time interval has been added, then a new passage is executed (see fig. 6 (a-c), col. 11, 12-54).

Pankaj do not explicitly disclose wherein said "a method for the allocation of resources in a communications system comprising several stations, at least two of which are not within range of visibility, the method comprising the following steps: defining a graph of competition between the different stations" and "a radio communications system in a state of broadcasting".

However in the same field of invention, Schaeffer discloses wherein said a method for the allocation of resources in a communications system comprising several stations (see abstract, col. 3, lines 9-25), at least two of which are not within range of visibility (see col. 1, lines 12-24), the method comprising the following steps: defining a graph of competition between the different stations (see col. 2, lines 21-30) and Yamashita further discloses wherein said a radio communications system in a state of broadcasting (see abstract, and col. 1, lines 9-12).

Therefore it would have been obvious to one of the ordinary skill in the art of networking at the time of this invention to combine the teaching of Pankaj, Schaeffer and Yamashita for a method for the allocation of resources in a radio communications system comprising several stations. Motivation for doing so would have been that it

provides for initial resource allocation as well as periodic system returning for enhanced system operation and efficiency.

**Regarding claim 2**, Pankaj discloses the method according to claim 1, wherein the interval E corresponds to a combination of the time interval numbers already assigned to a station  $S_i$  during preceding passages (col. 12, lines 55-67) and time intervals already assigned to the stations  $S_j$  which are related to  $S_i$  by a particular relationship known as a relationship of competition (col. 13, lines 1-15).

**Regarding to claim 3**, the combination of Pankaj and Schaeffer discloses the method according to claim 1, wherein the graph of the relationship of competition (Schaeffer: col. 2, lines 21-30) is set up according to the following steps: from a relationship of visibility written as R, a relationship of competition between stations, referenced C, is determined as follows (Pankaj: col. 6, lines 47-65):

two stations  $S_i$  and  $S_j$  are in competition,  $S_i C S_j$  if and only if

$(S_i R S_j \text{ and } (\text{NOT } S_j R S_i))$

or

$(S_j R S_i \text{ and } (\text{NOT } S_i R S_j))$

or

$(\exists S_k \text{ such that } S_k R S_i \text{ AND } S_k R S_j \text{ AND NOT } (S_i R S_j \text{ and } S_j R S_i))$  (Pankaj: col. 7, lines 1-24, col. 7-8, lines 65-67, 1-20).

**Regarding to claim 4**, Punkaj discloses the method according to claim 1, further comprising the following steps:

a) encoding the identifier  $I$  of each of the stations, on a number  $n$  of bits  $b_1, b_2, \dots, b_n$ , using two symbols corresponding respectively to a reception state and to a transmission state (col. 4, lines 46-65);

b) for any unspecified station  $S_i$ , during an attempt to make transmission, starting at a given identification slot (col. 13, lines 1-15);

b.1) for  $i$  varying from 1 to  $n$ , b.1.1) if the value of  $b_i$  is equal to the symbol corresponding to the reception state, the station  $S_i$  receives during the slot  $k+i-1$ : if the station  $S_i$  detects a signal sent by another station it considers itself not to be chosen; if the station  $S_i$  detects nothing, the station  $S_i$  continues to scan the bits  $b_i$  (col. 8, lines 1-20),

b.1.2) if the value of  $b_i$  is equal to the symbol corresponding to the transmission state, the station transmits during the slot  $k+i-1$  (col. 7, lines 66-67, col. 8, lines 1-20);

c) allocating the medium to the station that has performed the step b.2) without receiving the transmission symbol (col. 8, lines 21-36).

**Regarding to claim 5**, Punkaj discloses the method according to claim 4, comprising a step b.0) preliminary to the step b.1) for the transmission of the transmission symbol by the station  $S_i$  and wherein the steps b.1), b.1.1), b.1.2) may be carried out on identification slots varying from  $k+1$  to  $k+n$  (col. 8, lines 1-20, col. 11, lines 12-54).

**Regarding to claim 6**, the combination of Pankaj and Schaeffer disclose the method according to claim 4 using binary encoding (Pankaj: col. 4, lines 46-65) and the reception operation "receive 1" when a station detects a signal coming from another station and "receive 0" when it receives no signal and the "send 1" operation when the station transmits a signal in a given slot (Schaeffer: col. 5, lines 27-46).

**Regarding to claim 7**, Pankaj discloses the method according to claim 4, using an identification number taken in an interval  $[0, N-1]$  with  $N=2^n$  (col. 11, lines 12-40).

**Regarding to claim 8**, the combination of Pankaj and Schaeffer disclose the method according to claim 1, wherein the broadcasting medium is a radio station and wherein the stations are transmitter-receiver units (Pankaj : col. 1, lines 21-33, Schaeffer: col. 1, lines 12-24).

**Regarding to claim 9**, Pankaj substantially discloses the invention of as claimed a method for the allocation of access to a radio communication system in a state of broadcasting by several stations  $S_i$ , wherein the stations are provided with a digital processing circuit adapted to executing the steps of a method comprising the following steps:

defining a graph of competition between the different stations;



assigning time intervals to each station in making successive passages on all the stations and carrying out the following steps at each passage and for each station (see col. 1, lines 34-49):

E is an interval of given time interval numbers (see col. 12, lines 55-57)

n is the smallest natural integer that does not belong to the interval E (see col. 12, lines 58-59),

(A.1) if it is not the first passage AND if  $n > N_{\max}$ , then no time interval whatsoever is added to the station  $S_i$  (see fig. 5, col. 8, lines 5-20, col. 9, lines 27-42);

(A.2) if it is the first passage OR if  $n \leq N_{\max}$ , then n is added to the time intervals assigned to  $S_i$  (see fig. 7 (a-b), col. 11, lines 55-67, col. 12, lines 3-34);

(B) the loop of the passages is continued on all the stations:

(B.1) if, during a passage, no time interval has been added to any station, then no other passage is made; (B.2) if, during a passage, at least one time interval has been added, then a new passage is executed (see fig. 6 (a-c), col. 11, 12-54).

Pankaj do not explicitly disclose wherein said "a method for the allocation of access to a broadcasting medium by several stations  $S_i$ , wherein the stations are provided with a digital processing circuit adapted to executing the steps of a method comprising the following steps: defining a graph of competition between the different stations" and "a radio communications system in a state of broadcasting".

However in the same field of invention, Schaeffer discloses wherein said a method for the allocation of access to a broadcasting medium by several stations  $S_i$  (see abstract, col. 3, lines 9-25), wherein the stations are provided with a digital

processing circuit adapted to executing the steps of a method comprising the following steps: defining a graph of competition between the different stations (see col. 2, lines 21-30) and Yamashita further discloses wherein said a radio communications system in a state of broadcasting (see abstract, and col. 1, lines 9-12).

Therefore it would have been obvious to one of the ordinary skill in the art of networking at the time of this invention to combine the teaching of Pankaj, Schaeffer and Yamashita for a method for the allocation of resources in a radio communications system comprising several stations. Motivation for doing so would have been that it provides for initial resource allocation as well as periodic system returning for enhanced system operation and efficiency.

**Regarding to claim 10**, Pankaj discloses the method according to claim 9 wherein the interval E corresponds to a combination of the time interval numbers already assigned to a station  $S_i$  during preceding passages (col. 12, lines 55-67) and time intervals already assigned to the stations  $S_j$  which are related to  $S_i$  by a particular relationship known as a relationship of competition (col. 13, lines 1-15).

**Regarding to claim 11**, the combination of Pankaj and Schaeffer disclose the method according to claim 9, wherein the graph of the relationship of competition (Schaeffer: col. 2, lines 21-30) is set up according to the following steps: from a relationship of visibility written as R, a relationship of competition between stations, referenced C, is determined as follows (Pankaj: col. 6, lines 47-65):

two stations  $S_i$  and  $S_j$  are in competition,  $S_iCS_j$  if and only if

$(S_iRS_j \text{ and } (\text{NOT } S_jRS_i))$

or

$(S_jRS_i \text{ and } (\text{NOT } S_iRS_j))$

or

$(\exists S_k \text{ such that } S_kRS_i \text{ AND } S_kRS_j \text{ AND NOT } (S_iRS_j \text{ and } S_jRS_i))$  (Pankaj: col. 7, lines 1-24, col. 7-8, lines 65-67, 1-20).

**Regarding to claim 12**, Pankaj discloses the method according to claim 9, wherein the digital processing circuit is adapted for executing the following steps:

a) encoding the identifier  $I$  of each of the stations, on a number  $n$  of bits  $b_1, b_2, \dots, b_n$ , using two symbols corresponding respectively to a reception state and to a transmission state (col. 4, lines 46-65);

b) for any unspecified station  $S_i$ , during an attempt to make transmission, starting at a given identification slot (col. 13, lines 1-15);

b.1) for  $i$  varying from 1 to  $n$ , b.1.1) if the value of  $b_i$  is equal to the symbol corresponding to the reception state, the station  $S_i$  receives during the slot  $k+i-1$ : if the station  $S_i$  detects a signal sent by another station it considers itself not to be chosen; if the station  $S_i$  detects nothing, the station  $S_i$  continues to scan the bits  $b_i$  (col. 8, lines 1-20), b.1.2) if the value of  $b_i$  is equal to the symbol corresponding to the transmission state, the station transmits during the slot  $k+i-1$  (col. 7, lines 66-67, col. 8, lines 1-20);

Art Unit: 2144

c) allocating the medium to the station that has performed the step b.2) without receiving the transmission symbol (col. 8, lines 21-36).

**Regarding to claim 13**, Punkaj discloses the method according to claim 12 wherein it comprising a step b.0) preliminary to the step b.1) for the transmission of the transmission symbol by the station  $S_i$  and wherein the steps b.1), b.1.1), b.1.2) may be carried out on identification slots varying from  $k+1$  to  $k+n$  (col. 8, lines 1-20, col. 11, lines 12-54).

**Regarding to claim 14**, the combination of Punkaj and Schaeffer disclose the method according to claim 12 using binary encoding (Punkaj: col. 4, lines 46-65) and the reception operation "receive 1" when a station detects a signal coming from another station and "receive 0" when it receives no signal and the "send 1" operation when the station transmits a signal in a given slot (Schaeffer: col. 5, lines 27-46).

**Regarding to claim 15**, the combination of Punkaj and Schaeffer disclose the method according to claim 9 wherein the broadcasting medium is a radio station and wherein the stations are transmitter-receiver units (Pankaj : col. 1, lines 21-33, Schaeffer: col. 1, lines 12-24).

**Regarding to claim 16**, Pankaj discloses the method according to claim 9 comprising a station configuration device that is separate from the stations (col. 2, lines 19-22).

**Regarding to claim 17**, the combination of Punkaj and Schaeffer disclose the method according to claim 5, using binary encoding (Punkaj: col. 4, lines 46-65) and the reception operation "receive 1" when a station detects a signal coming from another station and "receive 0" when it receives no signal and the "send 1" operation when the station transmits a signal in a given slot (Schaeffer: col. 5, lines 27-46).

**Regarding to claim 18**, the combination of Punkaj and Schaeffer disclose the method of claim 13, using binary encoding (Punkaj: col. 4, lines 46-65) and the reception operation "receive 1" when a station detects a signal coming from another station and "receive 0" when it receives no signal and the "send 1" operation when the station transmits a signal in a given slot (Schaeffer: col. 5, lines 27-46).

**Examiner's Note:** Examiner has cited particular paragraphs, figures, columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

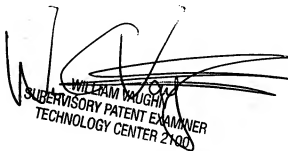
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to UMAR CHEEMA whose telephone number is (571)270-3037. The examiner can normally be reached on M-F 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Jr. Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

uc

  
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